

AMENDMENTS TO THE SPECIFICATION

Please replace the first full paragraph on page 1 with the following amended paragraph:

The present invention relates to an anti-reflection film, to an organic EL (Electro Luminescence) device, and to a display medium that uses the anti-reflection film and the organic EL device. In particular, the present invention relates to an anti-reflection film that suppresses reflectance in three light emission peak wavelengths in a light source that has light emission peaks in the so-called ~~prime~~primary colors, such as a three band fluorescent lamp. The present invention also relates to a three band organic EL device having light emission peaks in the ~~prime~~primary colors, and to a display device such as a liquid crystal monitor, which uses the anti-reflection film and the three band organic EL device.

Please replace the third full paragraph on page 4 with the following amended paragraph:

For example, it is said to be desirable to make the light emission peaks (light emission ~~maximums~~maxima) conform to the so-called ~~prime~~primary colors in order to maximize the color reproducibility of a monitor, or the color rendering of a fluorescent light.

Please replace the paragraph bridging pages 4 and 5 with the following amended paragraph:

Note that the term "~~prime~~primary colors" as used here refers to colors having wavelengths in the vicinity of 450 nm, 540 nm, and 610 nm (for example, these values ± 20

nm), colors to which the human eye is most sensitive. Specifically, this is discussed in: Thornton, W. A., "Matching Lights, Metamers, and Human Visual Response", J. Color and Appearance, 2(1), pp. 23-9 (1973); Brill, M. H., Finlayson, D., Hubel, P. M., and Thornton, W. A., "Prime Colors and Color Imaging", Proc. IS&T/SID 6th color Imaging Conference, pp. 33-42 (1998); Finlayson, G. D., and Morovic, P. M., "Metamer Crossovers of Infinite Metamer Sets", Proc. IS&T/SID 8th Color Imaging Conference, pp. 13-7 (2000), and the like.

Please replace the second full paragraph on page 6 with the following amended paragraph:

This type of organic EL device is a device that is expected to be developed and applied to self-light emitting displays, liquid crystal monitor backlights, lighting, and the like. No matter how the organic EL devices are used, it is still desirable that the light emission ~~maximums~~maxima of the organic EL devices conform to the ~~prime~~primary colors in order to maximize the color reproducibility and the color rendering of the organic EL devices.

Please replace the paragraph bridging pages 7-8 with the following amended paragraph:

The light emission peaks of fluorescent lamps and these types of monitors are designed to conform as much as possible to the ~~prime~~primary colors in order to maximize the color reproducibility and the color rendering of the fluorescent lamps and the monitors.

Please replace the first full paragraph on page 8 with the following amended paragraph:

The light that enters the human eye in the present-day office environment therefore is mostly composed of the ~~prime~~primary colors (including the vicinity of the ~~prime~~primary colors). It is not necessary for the anti-reflection film to control reflection of all visible light regions in this type of environment, as long as the reflectance of the ~~prime~~primary colors (including the vicinity of the ~~prime~~primary colors) is controlled.

Please replace the second full paragraph on page 8 with the following amended paragraph:

Considering monitor visibility, however, light emission from the fluorescent lights used as external light and light emission from the monitor backlights have identical wavelengths, and therefore a high precision is required in controlling the surface reflection of the ~~prime~~primary color wavelengths.

Please replace the paragraph bridging pages 8-9 with the following amended paragraph:

Further, the organic EL devices described above are expected to be developed and applied in various areas, such as natural light displays, liquid crystal monitor backlights, and lighting, but the maximum light emission of the organic EL devices does not match the ~~prime~~primary colors. There is a problem in that current organic EL devices are not sufficient for

these applications.

Please replace the second full paragraph on page 9 with the following amended paragraph:

In view of the conventional problems discussed above, a first object of the present invention is to provide an anti-reflection film that possesses a necessary and sufficient anti-reflection function under an office environment where nearly all light emission sources have light emission peaks in the ~~prime~~primary colors, to which the human eye is most sensitive; and a display medium that uses the anti-reflection film.

Please replace the first full paragraph on page 10 with the following amended paragraph:

In order to attain the first object described above, the first aspect of the present invention provides an anti-reflection film having reflectance ~~minimums~~minima in at least ~~prime~~primary colors.

Please replace the second full paragraph on page 10 with the following amended paragraph:

In order to attain the first object described above, the second aspect of the present invention provides a light emitting display medium having reflectance ~~minimums~~minima in at least ~~prime~~primary colors, and having light emission ~~maximums~~maxima in the ~~prime~~primary

colors.

Please replace the third full paragraph on page 10 with the following amended paragraph:

It is preferable that reflection function of the display medium having the reflectance ~~minimums~~minima in at least the ~~prime~~primary colors, is obtained by applying on a display screen of the display medium an anti-reflection film having the reflectance ~~minimums~~minima in at least the ~~prime~~primary colors.

Please replace the paragraph bridging pages 10 and 11 with the following amended paragraph:

In order to attain the first object described above, the third aspect of the present invention provides a light reflective display medium having reflectance ~~minimums~~minima in at least ~~prime~~primary colors.

Please replace the first full paragraph on page 11 with the following amended paragraph:

It is preferable that reflection function of the display medium having reflectance ~~minimums~~minima in at least the ~~prime~~primary colors, is obtained by applying on a display screen of the display medium an anti-reflection film having the reflectance ~~minimums~~minima in at least the ~~prime~~primary colors.

Please replace the second full paragraph on page 11 with the following amended paragraph:

In order to attain the second object described above, the fourth aspect of the present invention provides an organic EL device having light emission ~~maximums~~maxima in ~~prime~~primary colors.

Please replace the third full paragraph on page 11 with the following amended paragraph:

It is preferable that the organic EL device has the reflectance ~~minimums~~minima in at least the ~~prime~~primary colors.

Please replace the fourth full paragraph on page 11 with the following amended paragraph:

It is further preferable that reflection function of the organic EL device having the reflectance ~~minimums~~minima in at least the ~~prime~~primary colors, is obtained by applying on a display screen of the organic EL device an anti-reflection film having the reflectance ~~minimums~~minima in at least the ~~prime~~primary colors.

Please replace the fifth full paragraph on page 11 with the following amended paragraph:

In order to attain the second object-described above, the five aspect of the present invention provides an liquid crystal monitor using an organic EL device, which has reflectance

~~minimums~~minima in at least ~~prime~~primary colors, and uses as a supplemental light source an organic EL device having light emission ~~maximums~~maxima in the ~~prime~~primary colors.

Please replace the paragraph bridging pages 12 and 13 with the following amended paragraph:

Consider the present-day office environment, where nearly all light emission sources are three band fluorescent lamps or the like that have light emission peaks in the so-called ~~prime~~primary colors (including the vicinity of the ~~prime~~primary colors). An anti-reflection film according to the present invention is a film in which the film thickness and the index of refraction of each layer structuring the anti-reflection film are designed to minimize reflectance in the ~~prime~~primary colors in order to control the reflection of light having the wavelengths of the ~~prime~~primary colors.

Please replace the first full paragraph on page 13 with the following amended paragraph:

The term "~~prime~~primary colors" refers to colors in the vicinity of wavelengths to which the human eye is most sensitive. In the present invention, it is preferable that the ~~prime~~primary colors be in ranges of 450 ± 20 nm, 540 ± 20 nm, and 610 ± 20 nm.

Please replace the second full paragraph on page 13 with the following

amended paragraph:

In addition, it is more preferable that the ~~prime~~primary colors be in ranges of 440 ± 10 nm, 540 ± 10 nm, and 610 ± 10 nm.

Please replace the third full paragraph on page 13 with the following

amended paragraph:

The anti-reflection film is therefore structured in the first embodiment of the present invention to have minimum reflectance in at least these three wavelength regions. That is, the anti-reflection film of this embodiment has three or more reflectance ~~minimums~~minima, and the wavelengths of three of the reflectance ~~minimums~~minima conform to the ranges of the ~~prime~~primary colors described above.

Please replace the third full paragraph on page 16 with the following

amended paragraph:

As understood from FIG. 1A, FIG. 1B, and FIG. 1C, each of the anti-reflection films has reflectance ~~minimums~~minima in the ~~prime~~primary colors (including the vicinity of the ~~prime~~primary colors) at 440 ± 10 nm, 540 ± 10 nm, and 610 ± 10 nm.

Please replace the fourth full paragraph on page 16 with the following amended paragraph:

Three band anti-reflection films having reflectance ~~minimums~~minima in the ~~prime~~primary colors can thus be obtained by this embodiment.

Please replace the paragraph bridging pages 16-17 with the following amended paragraph:

Note that, although the anti-reflection films of the example explained above are films that have three ~~minimums~~minima in the ~~prime~~primary colors, the present invention is not limited to such films. Anti-reflection films that possess three or more ~~minimums~~minima, where three of the ~~minimums~~minima are in the ~~prime~~primary color (including the vicinity of the ~~prime~~primary color), may be used.

Please replace the second full paragraph on page 17 with the following amended paragraph:

The second embodiment is a light emitting display medium (or device) in which the (three band) anti-reflection film explained by the first embodiment, which has reflectance ~~minimums~~minima in at least the ~~prime~~primary colors, is applied to a cathode ray tube monitor.

Please replace the third full paragraph on page 17 with the following amended paragraph:

For cases in which interior room lighting is a three band fluorescent lamp, reflection in the three wavelengths (~~prime~~primary colors), which are the light emission peaks of the fluorescent lamp, are controlled by the (three band) anti-reflection film applied to the cathode ray tube monitor. Lighting projections can thus be minimized.

Please replace the paragraph bridging pages 17 and 18 with the following amended paragraph:

Further, the light emission of the cathode ray tube monitor also has three light emission peaks in the ~~prime~~primary colors as described above. Reflections of the light emitted from the cathode ray tube monitor are also controlled in the light emission peaks (~~prime~~primary colors) by the anti-reflection film that is applied to the monitor. Light transmits well, and is emitted to the outside, and therefore the light emission efficiency of the cathode ray tube monitor is maximized. The visibility of the cathode ray tube monitor is thus maximized.

Please replace the second full paragraph on page 18 with the following amended paragraph:

In this case as well, the lighting and the liquid crystal monitor backlight, when they are both three band fluorescent lamps, have light emission peaks in the ~~prime~~primary colors. Therefore the light taken in is maximized, projection is minimized, and visibility is maximized,

similar to the structure discussed above.

Please replace the paragraph bridging pages 18-19 with the following amended paragraph:

When lighting is a three band fluorescent lamp, reflections are controlled in the ~~prime~~primary colors, which are the light emission peaks of the three band fluorescent lamp. As a result, light having the wavelengths of the light emission peaks is taken in within the liquid crystal. There is a white diffuser panel in back of the reflective liquid crystal monitor, and this diffuser panel reflects all incident light.

Please replace the first full paragraph on page 19 with the following amended paragraph:

Light that is thus reflected, and then returns to a monitor surface, is controlled from being reflected again in the ~~prime~~primary colors by the anti-reflection film. The light that is taken in within the liquid crystals therefore exits to the outside of the liquid crystal monitor as it is.

Please replace the third full paragraph on page 19 with the following amended paragraph:

Further, in the reflective liquid crystal monitor, an RGB filter is disposed on a surface of the liquid crystal monitor so that the light that has entered within the liquid crystal monitor is modulated into RGB when the light is let out from the inside of the liquid crystal monitor. It is

preferable that the color filter possess ~~maximums~~maxima of transmittivity in the ~~prime~~primary colors.

Please replace the paragraph bridging pages 19 and 20 with the following amended paragraph:

The fourth embodiment of the present invention is explained first. The fourth embodiment is an embodiment that relates to an organic EL device having light emission ~~maximums~~maxima in the ~~prime~~primary colors.

Please replace the second full paragraph on page 20 with the following amended paragraph:

A three band organic EL device is structured to have light emission ~~maximums~~maxima in the ~~prime~~primary colors in this embodiment by using singlet light emitting materials like those shown hereinafter in a light emitting layer of the organic compound.

Please replace the third full paragraph on page 20 with the following amended paragraph:

Note that, as discussed above, the term "~~prime~~primary colors" refers to colors having wavelengths in the vicinity of 450 nm, 540 nm, and 610 nm (these wavelengths +20 nm), to which the human eye is most sensitive.

Please replace the fourth full paragraph on page 20 with the following amended paragraph:

In addition, it is preferable that the ~~prime~~primary colors be 440 ± 10 nm, 540 ± 10 nm, and 610 ± 10 nm in the present invention.

Please replace the second full paragraph on page 22 with the following amended paragraph:

The organic EL device is constructed by using these light emitting materials. The organic EL device having light emission ~~maximums~~maxima in the ~~prime~~primary colors as shown by the light emission waveforms of FIG. 2 can thus be achieved.

Please replace the first full paragraph on page 23 with the following amended paragraph:

The organic EL device of this embodiment thus has light emission ~~maximums~~maxima in the ~~prime~~primary colors, and therefore a high quality self-light emitting display, in which color reproducibility is maximized, can be structured by using the organic EL device.

Please replace the first full paragraph on page 24 with the following amended paragraph:

In the fifth embodiment, an anti-reflection film having reflectance ~~minimums~~minima in the ~~prime~~primary colors, 450 ± 20 nm, 540 ± 20 nm, and 610 ± 20 nm, is applied to a surface of a

monitor that uses the organic EL device of the fourth embodiment described above.

Please replace the second full paragraph on page 24 with the following amended paragraph:

Applying the anti-reflection film, which has reflectance ~~minimums~~minima in the ~~prime~~primary colors, can thus control reflection of light from three band fluorescent lamp and other lighting, which has light emission ~~maximums~~maxima in the ~~prime~~primary colors. The projections onto the monitor surface can therefore be minimized.

Please replace the paragraph bridging pages 24 and 25 with the following amended paragraph:

Further, the anti-reflection film having reflectance ~~minimums~~minima in the ~~prime~~primary colors is applied, and therefore reflection of light in the ~~prime~~primary colors emitted by the (three band) organic EL device of the present invention, which are structured to have light emission ~~maximums~~maxima in the ~~prime~~primary colors, is controlled. The transmittivity of the anti-reflection film is increased, and it becomes easier for light to exit to the outside. Color reproducibility and visibility are both maximized.

Please replace the third full paragraph on page 25 with the following amended paragraph:

The liquid crystal monitor of this embodiment is one in which an anti-reflection film having reflectance ~~minimums~~minima in the ~~prime~~primary colors is applied to a surface of the monitor. The liquid crystal monitor of this embodiment uses the organic EL device of the fourth embodiment, which has light emission ~~maximums~~maxima in the ~~prime~~primary colors, in a supplemental light source.

Please replace the first full paragraph on page 26 with the following amended paragraph:

Further, as described above, it is preferable that the ~~prime~~primary colors be in ranges of 450 ± 20 nm, 540 ± 20 nm, and 610 ± 20 nm. It is more preferable that the ~~prime~~primary colors be in ranges of 440 ± 10 nm, 540 ± 10 nm, and 610 ± 10 nm.

Please replace the second full paragraph on page 26 with the following amended paragraph:

In this embodiment, the anti-reflection film having reflectance ~~minimums~~minima in the ~~prime~~primary colors is applied to the monitor surface of the liquid crystal monitor, and the organic EL device having light emission ~~maximums~~maxima in the ~~prime~~primary colors is used as the supplemental light source for the liquid crystal monitor. Projections onto the monitor surface are therefore minimized, and visibility is maximized. Accordingly, sufficient function can be achieved under the present-day office environment, and there are no ecological problems.

Please replace the paragraph bridging pages 26-27 with the following amended paragraph:

As explained above, in accordance with the first to the third aspects of the present invention, it becomes possible to obtain an anti-reflection film that possesses a necessary and sufficient anti-reflection function, and that is capable of increasing visibility of a display medium, under the present-day office environment where nearly all light emission sources have light emission peaks in the ~~prime~~primary colors, to which the human eye is most sensitive. It also becomes possible to obtain a display medium that uses the anti-reflection film.